

REMARKS

Claims 1-5 and 8-34 were pending in the present application, prior to any amendments herein.

Claims 1-5, 8, 9 and 22-26 were allowed in the Office Action dated December 8, 2005.

Claims 10-16, 18-20 and 27-31 were rejected, and claims 17, 20, 21 and 32-34 objected to in the Office Action.

Claim Rejections under 35 USC 112

Claim 20 was rejected under 35 USC 112, second paragraph, as being indefinite because of a lack of antecedent basis for the phrase, "the means within the substrate for isolating adjacent floating gates." Claim 20 is amended without prejudice to delete, "within the substrate" and add, "in the wordline direction." Thus, claim 20 refers to "means for isolating adjacent floating gates in the wordline direction," which is believed to have proper antecedent basis. Thus, it is believed that the rejection of claim 20 under 35 USC 112 is overcome.

Claim Rejections under 35 USC 102

The Office Action rejected claims of the present application under 35 USC 102 based on two references. These rejections are addressed here in the opposite order to that of the Office Action, so that the reference used to reject a greater number of claims is discussed first.

Claims 10-16, 18, 19 and 27-31 were rejected under 35 USC 102(e) as being anticipated by Van Duuren et al. (US 2005/0218445). However, claim 17 was indicated to contain allowable subject matter because, "Van Duuren et al. does not teach that the non-volatile storage device is a NAND flash memory device," Office Action, page 9, lines 12-13. The limitation, "wherein the non-volatile storage device is NAND flash memory," previously recited in claim 17, has been added to claim 10. Accordingly, claim 10 is believed to be allowable because this limitation, in combination with all other limitations of claim 10, was not disclosed by the cited references.

Claims 11-17 depend from claim 10 and are therefore submitted to be allowable at least as depending from an allowable base claim.

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With respect to claim 18, the Office Action stated that the phrase, "NAND flash memory," in the preamble of claim 18, was not given patentable weight. Claim 18 is amended without prejudice to recite, "forming a plurality of NAND strings of floating gates" in the body of the claim. The characterization of the phrase "NAND flash memory" in the preamble is therefore believed to be a moot point, and no position is taken with respect to whether this phrase should be given patentable weight. Thus, claim 18 is believed to be allowable because "forming a plurality of NAND strings of floating gates," in combination with all other limitations of claim 18, was not disclosed by the cited references.

Claim 19 is canceled.

Claim 20 is amended to be in independent form, incorporating all the limitations previously recited in claim 19. The Office Action stated, "Claim 20 would be objected to as being dependent upon a rejected base claim if rewritten or amended to overcome the rejection(s) under 35 USC 112, 2nd paragraph." Office Action, page 9, lines 4-5. It is believed that the rejection under 35 USC 112 is overcome, as discussed above. Furthermore, it is believed that any objection to claim 20 is also overcome by rewriting claim 20 in independent form. Therefore, claim 20 is submitted to be allowable.

Claim 21 is submitted to be allowable at least for depending from an allowable base claim.

Claim 27 is amended to recite, "forming a plurality of strings of memory cells" and "the plurality of strings of floating gates extending in a second direction that is perpendicular to the first direction." These limitations are believed to be supported throughout the specification, in particular, at paragraph [0020] and [0021]. No such strings appear to be shown by Van Duuren. Therefore, it is submitted that claim 27 is allowable over Van Duuren.

Claims 28-30 depend from claim 27 and are submitted to be allowable at least for depending from an allowable base claim.

Claim 31 is amended to recite, "wherein the floating gate is T-shaped in cross-section." This limitation was previously recited in claim 32, which was indicated to be allowable if rewritten in independent form. Claim 31 therefore corresponds to claim 32 rewritten in independent form and, as such, is submitted to be allowable.

Claim 32 is canceled. Claim 33 is amended to depend from claim 31 instead of claim 32. Claims 33 and 34 are submitted to be allowable as indicated by the Office Action.

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Claims 10-14 and 18 were rejected under 35 USC 102(b) as being anticipated by Joo. Claim 10 is believed to be allowable, as discussed above, for containing a limitation previously recited in claim 17, which in combination with all other limitations of claim 10, was not disclosed by the cited references.

In addition, claim 10 recites, "conductive sidewall elements positioned along the bitline axes, the sidewall elements located at sides of the floating gates between adjacent floating gates, the sidewall elements shielding the floating gates." The Office Action cited floating gate 50 and conductive spacer 46 of Joo as teaching these claim elements. However, conductive spacer 46 appears to form part of floating gate 50. "The conductive pattern 42 for the floating gate and the conductive spacer 46 are electrically connected to each other to form the floating gate 50." Column 7, lines 15-18. See also Figure 9B. Thus, it is not seen how conductive spacer 46 could be considered "between adjacent floating gates" or how conductive spacer 46 could be considered to be "shielding the floating gates." Therefore, claim 10 is submitted to be allowable over Joo.

Claims 11-16 depend from claim 10 and are therefore submitted to be similarly allowable over Joo.

Claim 18 is amended to recite, "forming a plurality of NAND strings of floating gates," in the body of the claim. Claim 18 is therefore submitted to be allowable as discussed above because this limitation, in combination with all other limitations of claim 18, does not appear to be disclosed by the cited references.

In addition, claim 18 recites, "forming conductive members between the bitline sides of floating gates, the members shielding floating gates from electrical fields having a component in the bitline direction." The Office identified conductive pattern 42 and conductive spacer 46 of Joo as corresponding to the floating gates and conductive members respectively of claim 18. However, conductive pattern 42 appears to form only part of floating gate 50. "The conductive pattern 42 for the floating gate and the conductive spacer 46 are electrically connected to each other to form the floating gate 50," column 7, lines 15-18. Thus, it is not seen how conductive pattern 42 alone may be considered to be a floating gate. Furthermore, it is not clear how conductive spacer 46 could be considered to be shielding conductive pattern 42.

ADDITIONAL AMENDMENT

Claim 15 is amended to delete the limitation, "wherein the sidewall elements comprise a conductive material" because claim 10, from which claim 15 depends, was earlier amended to recite, "conductive sidewall elements." Thus, the deleted limitation of claim 15 is believed to be redundant and its deletion is not believed to affect the scope of claim 15.

NEW CLAIMS

New claims 35 and 36 are added by this amendment. Claim 35 depends from claim 10 and recites, "wherein the sidewall elements are not electrically connected to a wordline." Claim 36 depends from claim 18 and recites, "the conductive members are not electrically connected to the control gates." These limitations are believed to be supported throughout the specification, in particular, at paragraph [0026]. Claims 35 and 36 are submitted to be allowable at least for depending from allowable base claims.

CONCLUSION

In view of the amendments and remarks contained herein, it is believed that all claims are in condition for allowance and an indication of their allowance is requested. However, if the Examiner is aware of any additional matters that should be discussed, a call to the undersigned attorney at: (415) 318-1160 would be appreciated.

Respectfully submitted,

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